

Audit



Report

OFFICE OF THE INSPECTOR GENERAL

AUTOMATIC TEST SYSTEMS ACQUISITION

Report No. 95-024

November 4, 1994

Department of Defense

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Acronyms

ATE	Automatic Test Equipment
ATS	Automatic Test Systems
CASS	Consolidated Automated Support System
IFTE	Integrated Family of Test Equipment
OSD	Office of the Secretary of Defense
USD(A&T)	Under Secretary of Defense for Acquisition and Technology

Scope and Methodology

We conducted this program audit from March 1994 through September 1994 and reviewed data dated from January 1989 through August 1994. To accomplish the objectives, we interviewed and obtained program documentation from the Office of the Secretary of Defense (OSD) and Military Department officials involved with ATS. Specifically, we discussed and

- o reviewed DoD ATS policy and procedures for monitoring the acquisition and management of maintenance and diagnostic test equipment,

- o evaluated ATS research and development funding and related documents,

- o reviewed the formulation of ATS directives resulting from DoD policy for ATS, and

- o reviewed the DoD Automatic Test Systems Investment Strategy Study.

The audit was made in accordance with auditing standards issued by the Comptroller General of the United States, as implemented by the Inspector General, DoD, and accordingly included such tests of internal controls as were deemed necessary. We did not rely on computer-processed data to support our audit results. Enclosure 4 lists the organizations visited or contacted.

Internal Controls

Internal Controls Evaluated. We evaluated internal controls related to the effectiveness of the ATS acquisition process and the adequacy of ATS to achieve commonality among the Military Departments as part of the DoD ATS Investment Strategy. We also assessed the implementation of the requirements in DoD Directive 5010.38, "Internal Management Control Program," April 14, 1987, including performance of vulnerability assessments and management control reviews.

Internal Control Weakness Not Identified. We did not identify any material internal weakness, as defined by DoD Directive 5010.38; however, the Military Departments had not yet performed vulnerability assessments and management control reviews on ATS. Personnel from OSD and the Military Departments indicated that, since they were still formulating DoD ATS policies and procedures, performing the assessments and reviews before establishing policies and procedures would be premature.

Prior Audits and Other Reviews

Since 1989, the Inspector General, DoD, has issued four reports that address ATS. Enclosure 3 discusses those four reports and the status of management's implementation of report recommendations.

Background

Automatic Test Systems. Automatic test systems (ATS) are used to test weapon system electronics during manufacturing and maintenance. DoD ATS are technically complex and, in some cases, as costly as the weapon systems they support, from \$1 billion to \$2 billion. Consequently, Congress has addressed the need to establish ATS commonality in acquisition of ATS among the Military Departments.

Congressional Direction for FY 1993. The House of Representatives Conference Report No. 102-1015, "Making Appropriations for the Department of Defense for the Fiscal Year Ending September 30, 1993, and for Other Purposes," October 5, 1992, addressed automatic test equipment and directed that OSD:

- o consider the current families of Air Force support equipment, the Navy Consolidated Automated Support System (CASS), and the Army Integrated Family of Test Equipment (IFTE) when establishing a common family of test equipment;

- o develop a DoD-wide policy requiring automatic test equipment commonality in standards among the Military Departments along with an oversight system to ensure compliance;

- o ensure that the Air Force establishes a Secretarial mandate and control procedures for standardized test equipment; and

- o provide a report by April 1, 1993, that addresses DoD's ATS investment strategy study, the strategy's potential savings, and how the strategy is being implemented.

DoD's Automatic Test Systems Investment Strategy Study. On May 20, 1993, the Assistant Secretary of Defense for Production and Logistics¹ (the Assistant Secretary) provided a partial response to the conference report. This response provided the results of DoD's ATS investment strategy study, which was conducted by a team consisting of personnel from OSD, the Military Departments, and the Institute for Defense Analysis. The study indicated that DoD had invested an estimated \$35 billion in ATS from 1980 through 1992, with an additional \$15 billion estimated for associated ATS support. The DoD plans to spend another \$11 billion for ATS through 1999 if acquisition strategy changes are not adopted. If DoD factory test equipment investments are included, the ATS expenditure may total more than \$100 billion from 1980 through 1999. The study concluded that implementing an investment strategy that uses designated DoD-standard ATS families, instead of weapon system-unique ATS, should reduce ATS acquisition cost. The cost reduction would range from 15 to 20 percent from FYs 1993 through 1999, resulting in a potential net saving of more than \$1.5 billion. The study further concluded that

¹In September 1993, OSD disestablished this office and created the Offices of the Assistant Secretary of Defense (Economic Security), the Deputy Under Secretary of Defense (Environmental Security), and the Deputy Under Secretary of Defense (Logistics).

dispersed DoD ATS investment decisions within and across Military Department and weapon program lines is a major contributing factor to DoD ATS proliferation.

The Assistant Secretary also indicated that needed policy revisions were being developed and that the Military Departments were coordinating ATS strategy implementation. He planned to conclude the response to the conference report during the fourth quarter of FY 1993. Further, he stated that, in the interim, Acquisition Category I and other Defense Acquisition Board level interest programs would be assessed for ATS strategy application as a part of Defense Acquisition Board reviews.

According to an official from the Office of the Deputy Under Secretary of Defense (Economic Security), the USD(A&T) provided, in June 1994, a follow-up response to the conference report. The official stated that Senate and House Appropriation Committee staffers advised him that Congress did not require OSD to provide further ATS-related responses. We contacted a Senate Appropriations Committee staffer to determine whether Congress required OSD, as of September 1994, to provide further responses. The staffer indicated that additional OSD responses were not required since OSD issued, in January 1994, the DoD ATS investment strategy study and was developing DoD-wide ATS policy.

Congressional Direction for FY 1994. The House of Representatives Committee on Appropriations Report No. 103-254, "Department of Defense Appropriations Bill, 1994," September 22, 1993, provided additional congressional direction on DoD's ATS program. The Committee recommended that the Under Secretary of Defense for Acquisition:²

- o review and approve immediately DoD's proposed acquisition policy that defines and requires the use of ATS for weapon system and equipment test and maintenance,

- o establish a separate research and development program for future ATS technology for needed family modifications and research and development for next generation ATS, and

- o submit an OSD-approved cost-benefits analysis to the congressional defense committees before developing and procuring weapon system-unique ATS.

Discussion

DoD Policy Formulation. In FY 1994, the Office of the USD(A&T) began formulating DoD policy and procedures for ATS acquisition in response to congressional directions and previous audit reports from the Office of the Inspector General, DoD. In an April 29, 1994, policy memorandum, the

²Renamed USD(A&T) in November 1993.

USD(A&T) appointed the Navy as the DoD Executive Agent for ATS and directed that it provide the Director, Weapon Support Improvement Group, Office of the Assistant Secretary of Defense (Economic Security), Office of the USD(A&T):

- o a coordinated Executive Agent Charter to issue as a DoD directive;
- o proposed acquisition changes to incorporate in DoD Instruction 5000.2;
- o recommended organizational and funding adjustments to implement ATS policy; and
- o a survey, which was to be completed by October 29, 1994, of all current and ongoing Military Department ATS programs for application of the new policy.

On August 29, 1994, the DoD ATS Executive Agent Office forwarded the proposed draft directive and DoD Instruction 5000.2 language changes, including recommended organizational and funding adjustments, to the Assistant Secretary of the Navy (Research, Development and Acquisition) for endorsement to USD(A&T). When we concluded this audit in September 1994, the Office of the USD(A&T) had granted the Navy a 30-day extension to complete the draft directive and language changes. However, on October 31, 1994, when we finalized this audit, the Navy had not yet forwarded the draft directive and language changes to USD(A&T). The Navy was also coordinating a request to USD(A&T) for a 30-day extension to complete the survey of all current and ongoing Military Department ATS programs.

Proactive Policy Implementation. To implement the ATS policy memorandum, OSD and the Military Departments established working groups and were coordinating ATS policy.

Working Group Establishment. The DoD ATS Executive Agent Organization established working groups to assist the DoD ATS management board, which includes representatives from the ATS Executive Agent Office and each Military Department. The ATS policy working groups are accomplishing the tasks directed in the April 29, 1994, memorandum and developing a waiver review process.

Policy Coordination. Officials in the Office of the Director, Weapon Support Improvement Group, indicated that they plan to coordinate the draft ATS policy and procedures with the same principal parties with which the April 29, 1994, memorandum was coordinated. Because the memorandum was not coordinated with the Office of the Director, Operational Test and Evaluation, we suggested, and Weapon Support Improvement Group officials agreed, that the Office of the Director, Operational Test and Evaluation, should be included in the coordination of the ATS acquisition policy and procedures.

Adequacy of ATS to Achieve Commonality. The DoD ATS investment strategy study included an in-depth review of data on ATS supporting 15 DoD

weapon systems. Analyses were made to assess technical capabilities of modern DoD ATS and to determine whether DoD can meet cross-weapon system and cross-Service test requirements, using standard ATS families. The study identified that technical testing capabilities of unique ATS had considerable overlap. In the past, duplicated ATS capabilities often resulted because DoD individual program and depot managers made ATS investment decisions in a decentralized and uncoordinated manner. Based on the analyses, the study concluded that existing general purpose ATS, comprised of IFTE and CASS, can meet an estimated 95 percent of DoD's technical test requirements for the next decade, with minimal modifications.

Conclusion

The DoD ATS investment decisions will become more focused, resulting in reductions of duplicated ATS capabilities, when the DoD ATS investment strategy changes are adopted and the DoD ATS acquisition policy and procedures that are being developed are completed. Specifically, the implementation of a new DoD ATS Investment Strategy and ATS policy and procedures will:

- o minimize unique types of ATS being introduced into DoD field, depot, and manufacturing operations by focusing ATS development and upgrade investments on a small number of ATS families;
- o increase the use of commercial-off-the-shelf testers and components by eliminating duplicate Defense-unique ATS industrial capabilities and using widely used commercial and dual-use test capabilities; and
- o reduce logistics burdens and long-term costs to DoD.

The considerable cost for research and development and procurement of unique types of ATS called for a change in the current ATS acquisition process. As we discussed, DoD has taken actions to establish a cost-effective ATS acquisition program by formulating ATS policy and determining the adequacy of designated standard ATS families to meet DoD automatic testing technical requirements.

Management Comments

We provided a draft of this report to the addressee on September 30, 1994. Because the report made no recommendations, official comments were not required. However, on October 27, 1994, we received informal comments from the DoD ATS Executive Agent Office (the Navy). We considered those comments in preparing this final report. The comments suggested minor factual changes to the draft report. Also, the Navy advised that it had not yet completed the Executive Agent Charter for issuance as a DoD directive, the DoD Instruction 5000.2 language changes, and the survey of all current and ongoing Military Department ATS programs. When OSD and the Navy complete those documents and the survey, we request that the Navy provide us

with copies of the DoD directive and the DoD Instruction 5000.2 language changes and an executive summary of the survey results. This report does not have a quantifiable financial impact.

We appreciate the courtesies extended to the audit staff. If you have any questions on this report, please contact Mr. John E. Meling, Program Director, at (703) 604-9091 (DSN 664-9091) or Mr. Jack D. Snider, Project Manager, at (703) 604-9087 (DSN 664-9087). We list the audit team members inside the back cover. Enclosure 5 lists the distribution of this report.



Robert J. Lieberman
Assistant Inspector General
for Auditing

Enclosures

Definitions of Terms

Acquisition Category. A classification established to facilitate decentralized decisionmaking and execution and compliance with statutorily imposed requirements. The categories determine the level of review, decision authority, and applicable procedures and range from Acquisition Categories I to IV.

Automatic Test Equipment. Automatic test equipment (ATE) include an operating system or software and a range of hardware components. The components consist of items such as a main computer within the test equipment, an operating system, stimulus and measurement instruments, signal control and switches, and interfaces with heating and cooling sources and structural support.

Automatic Test Systems. Automatic test systems (ATS) are comprised of ATE hardware and operating system software and test program sets that include hardware connectors and software programs to test individual weapon electronic items. The ATS are used in DoD field and depot electronics maintenance activities to test electronics technologies that are difficult or impossible to test manually, to reduce troubleshooting times, and to augment the skills of field technicians. ATS are also used in manufacturing and acceptance testing.

Consolidated Automated Support System. The Navy's Consolidated Automated Support System (CASS) Program is composed of standardized ATE. The ATE is structured around a common core with four testing configurations with computer-assisted, multi-function capabilities to support testing of aircraft subsystems and missiles. The CASS Program features fleet-wide standardization of hardware and software elements and is designed to enhance electronic test capability over existing ATE. The CASS Program's system hardware is also designed to provide the Navy intermediate and depot-level maintenance with better electronic testing capability. The CASS Program is composed of functional interfaces allowing the testing of a variety of hardware. The interfaces are evolving to meet Air Force as well as Navy requirements. To minimize unique types of automatic test systems, the Under Secretary of Defense for Acquisition and Technology has established policy to require DoD Components to satisfy all acquisition needs for ATE hardware and software by using designated automatic test systems. The CASS Program is one of those designated systems.

Defense Acquisition Board. The Defense Acquisition Board is the senior advisory body to the Under Secretary of Defense for Acquisition and Technology to advise the Under Secretary in enforcing policies and procedures governing the operations of the DoD Acquisition System. The Defense Acquisition Board is the primary forum to advise the Under Secretary on mission needs approved by the Joint Requirements Oversight Council, possible Concept Exploration or Definition study efforts, and milestone decision point reviews and program reviews of major Defense acquisition programs subject to Defense Acquisition Board review. The reviews ensure that a program is ready to proceed into more advanced stages of development or production before receiving milestone approval and that proposed program plans for subsequent stages are consistent with sound acquisition management practices.

Definitions of Terms

Department of Defense Acquisition System. A single uniform system by which all equipment, facilities, and services are planned, designed, developed, acquired, maintained, and disposed of within the DoD. The system encompasses establishing and enforcing policies and practices that govern acquisitions, to include documenting mission needs and establishing performance goals and baselines, determining and prioritizing resource requirements for acquisition programs, planning and executing acquisition programs, directing and controlling the acquisition review process, developing and assessing logistics implications, contracting, monitoring the execution status of approved programs, and reporting to Congress.

Department of Defense Standard Automatic Test System Family. An automatic test system with general purpose capabilities that meet the testing needs of multiple DoD systems and has been designated by one or more of the Military Departments as a common automatic test system for multiple weapon system testing applications. DoD has identified the Army Integrated Family of Test Equipment Base Shop Test Facility and the Navy Consolidated Automatic Support System as the two existing ATS standard families.

Integrated Family of Test Equipment. The Army initiated the Integrated Family of Test Equipment (IFTE) to reduce the proliferation of unique ATE that it was procuring for weapon systems. Under IFTE, the Army designed standard ATE to provide multi-functional testing capabilities of electronic components for major weapons systems. The IFTE is composed of five subsystems of ATE. The primary intermediate maintenance level subsystem is the Base Shop Test Facility (the Test Facility) that is installed in a shelter and mounted on a 5-ton truck for Army use. The Test Facility is general purpose, multi-functional ATE that uses several configurations of tests to diagnose electronic faults or failures in weapon systems. To minimize unique types of automatic test systems, the Under Secretary of Defense for Acquisition and Technology has established policy to require DoD Components to satisfy all acquisition needs for ATE hardware and software by using designated automatic test systems. The IFTE is one of those designated systems.

Test Program Sets. Interface test adapters, test program software, and test program documentation and data. The test program set provides necessary resources and information to test an item on ATE.

Automatic Test Systems Acquisition Policy



ACQUISITION AND
TECHNOLOGY

THE UNDER SECRETARY OF DEFENSE
3010 DEFENSE PENTAGON
WASHINGTON, D.C. 20301-3010



20 APR 1994

MEMORANDUM FOR ASSISTANT SECRETARY OF THE ARMY (RESEARCH,
DEVELOPMENT, AND ACQUISITION)
ASSISTANT SECRETARY OF THE NAVY (RESEARCH,
DEVELOPMENT AND ACQUISITION)
ASSISTANT SECRETARY OF THE AIR FORCE (ACQUISITION)

SUBJECT: DoD Policy for Automatic Test Systems

I am establishing a policy that DoD components shall satisfy all acquisition needs for automatic test equipment hardware and software by using designated automatic test system (ATS) families. This policy is being undertaken to minimize unique types of ATS being introduced into DoD field, depot, and manufacturing operations, and to encourage use of commercial-off-the-shelf (COTS) testers and components, thereby reducing logistics burdens and long-term costs to the DoD.

ATS capabilities shall be defined through control of critical hardware and software elements and interfaces to ensure DoD family tester and COTS tester and component interoperability, and to meet future DoD test needs. Based on the recommendations of a joint Service ATS investment strategy group, the Army's Integrated Family of Test Equipment (IFTE) and the Navy's Consolidated Automated Support System (CASS) are designated as the initial DoD families. For weapon programs which require no field ATS, depot and factory sell-off ATS needs may be met by use of COTS testers and components, along with the defined critical elements and interfaces.

ATS will now be managed as a separate standardized commodity. The Navy is appointed as the DoD Executive Agent for ATS. The Executive Agent's responsibilities will include: defining and managing DoD ATS standards, ATS family product engineering and R&D requirements, ATS specification and procurement review, waiver process for OUSD(A&T), and Lead Standardization Activity.

The Navy is requested to establish an ATS Executive Agent Office. The Army, Marine Corps, and Air Force are requested to identify a Senior-Level individual who will be principally responsible within their Service for ATS management. The Director, Weapon Support Improvement Group (WSIG), OUSD(A&T), will provide program oversight.



Automatic Test Systems Acquisition Policy

Within 90 days, the Navy shall provide to the Director, WSIG a coordinated Executive Agent Charter for issuance as a DoD Directive, recommended organizational and funding adjustments to implement this policy, and proposed acquisition changes to be incorporated in DoD Directive 5000.2. In addition, the Navy shall lead a review of all current and ongoing Service ATS programs for application of the new policy. This effort is to be completed within 180 days. In the interim, I ask that no ATS acquisitions be initiated outside the designated families or COTS testers as specified above.



R. Noel Longemare

Prior Audits and Other Reviews

Audit Report No. 93-138, "Quick-Reaction Report on the Acquisition of the F-15 Downsized Tester," June 30, 1993. The report stated that the Director, Weapon Support Improvement Group, Office of the Assistant Secretary of Defense (Production and Logistics),* requested the audit. He requested the audit because the Air Force was not developing a family of standardized ATE or using existing DoD families of ATE that met multiple weapon system and Military Department test requirements. The report stated that the Air Force's development and acquisition of unique ATE to replace existing F-15 avionics ATE was not cost-effective. This ineffective cost situation occurred because the Air Force did not comply with Defense acquisition management guidance and perform sufficient cost, technical, and requirements analyses to determine whether standard DoD families of ATE or other ATE could satisfy Air Force ATE requirements. In addition, OSD and the Air Force did not develop and implement effective policy and guidance on standardized ATE. The report recommended that the Air Force discontinue acquisition of unique ATE to replace existing F-15 avionics ATE and prepare thorough analyses of costs and technical requirements for standardized ATE. The report also recommended that USD(A&T) and the Air Force implement policies and procedures for standardized ATE. The Air Force nonconcurred with the recommendations to discontinue acquisition of unique ATE and to prepare the analyses. The Air Force stated that discontinuing the acquisition would result in monetary losses, that an operational requirements document was approved by the Air Force Vice Chief of Staff, and that a Cost and Operational Effectiveness Analysis was not required. The Assistant Secretary of Defense (Production and Logistics) and the Air Force agreed to implement policies and procedures for standardizing ATE. The USD(A&T) directed his staff to circulate proposed ATS acquisition policy language for coordination by October 9, 1993. In the interim, his staff would review ATS acquisitions against the objective of procuring standardized in-inventory ATE. On April 29, 1994, USD(A&T) issued a DoD policy memorandum for ATS.

Audit Report No. 92-095, "Acquisition and Management of Maintenance and Diagnostic Automatic Test Equipment," May 21, 1992. As a part of a DoD-wide audit of the acquisition and management of maintenance and diagnostic ATE, the report evaluated the effectiveness of DoD-wide guidance and procedures for monitoring the acquisition and management of maintenance and diagnostic ATE by the Military Departments. The report stated that management deficiencies by the Military Departments and the lack of uniform and comprehensive DoD-wide policy and guidance contributed to the continued proliferation of maintenance and diagnostic ATE and has seriously effected the cost-effectiveness of acquisitions. The report recommended that comprehensive and uniform DoD-wide policy and guidance on the acquisition and management of maintenance and diagnostic ATE be developed and implemented and that OSD oversight responsibilities be established. Management basically agreed on

*In September 1993, OSD disestablished this office and created the Offices of the Assistant Secretary of Defense (Economic Security), the Deputy Under Secretary of Defense (Environmental Security), and the Deputy Under Secretary of Defense (Logistics).

Prior Audits and Other Reviews

a need for uniform and comprehensive DoD-wide policy guidelines on the acquisition of ATE and the need to clarify OSD management responsibilities. An ATS study was completed and a DoD ATS investment strategy that capitalizes on existing investments was developed. The investment strategy was documented in a summary report that recommended management changes, acquisition policy changes, and next-generation technology investments to verify implementation and long-term viability of the strategy. Policy changes are being generated and coordinated at the USD(A&T) level. On April 29, 1994, the USD(A&T) issued a DoD policy memorandum for ATS (Enclosure 2).

Audit Report No. 92-037, "Effectiveness of the Air Force's Internal Controls Over the Development and Acquisition of Maintenance and Diagnostic Systems," January 23, 1992. As part of a DoD-wide audit of the development and acquisition of DoD maintenance and diagnostic systems, the report evaluated the effectiveness of the Air Force's principal program for monitoring the development and acquisition of maintenance and diagnostic systems, the modular ATE program. The report stated that Air Force Systems Command's product divisions and Air Force Logistics Command's logistics centers were not complying with Air Force guidance for acquiring standardized ATE. As a result, the Air Force experienced a continued proliferation of equipment and provided no assurance of acquiring ATE cost-effectively. The report recommended that the Air Force develop and implement an effective internal control management system for monitoring the development and acquisition of ATE. The Air Force concurred with the report and accordingly issued Air Force Policy Directive 63-2, "Automatic Test Systems and Equipment," July 19, 1994. This Directive established responsibilities and authorities for developing and implementing an effective ATS development and acquisition internal control management system as recommended in the report.

Audit Report No. 92-022, "Development and Acquisition of DoD Maintenance and Diagnostic Systems-Navy," December 17, 1991. The report stated that the Navy's plans for transitional to standard automatic test equipment (ATE) developed under its Consolidated Automated Support System Program have not been fully effective. As a result, potential savings opportunities have been missed because workload and economic analyses were not performed by several Navy activities to determine whether it was feasible and economical to transition from existing test equipment for their weapon systems to Consolidated Automated Support System test equipment. The report recommended that the Navy develop an effective internal control management system to monitor the Navy-wide development, acquisition, and distribution of test, measurement, and diagnostic equipment. The Navy nonconcurred with the finding and all recommendations. In mediation, the Navy stated that:

- o it was constructing a database of all ATE;
 - o the Office of the Assistant Secretary of the Navy (Research, Development and Acquisition) was assigned management responsibility for all Navy ATE;
 - o managers were required to justify the use of non-CASS equipment;
- and

o managers will reuse CASS equipment after test program set development.

Also, the Navy agreed to use a modified Naval Air Systems Command strategy for the transition to ATE.

Organizations Visited or Contacted

Office of the Secretary of Defense

Under Secretary of Defense for Acquisition and Technology, Washington, DC
Principal Deputy Under Secretary of Defense (Acquisition and Technology),
Washington, DC
Director, Acquisition Program Integration, Washington, DC
Director, Defense Research and Engineering, Washington, DC
Assistant Secretary of Defense (Economic Security), Washington, DC
Director, Weapon Support Improvement Group, Washington, DC
Deputy Under Secretary of Defense (Logistics), Washington, DC
Director, Operational Test and Evaluation, Washington, DC

Department of the Army

Army Materiel Command, Alexandria, VA
Director, U.S. Army Test Measurement and Diagnostic Equipment Activity,
Redstone Arsenal, AL

Department of the Navy

Assistant Secretary of the Navy (Research, Development and Acquisition),
Washington, DC
Naval Air Systems Command, Arlington, VA
Aviation Support Equipment Office, Arlington, VA
Naval Air Warfare Center, Aircraft Division, Lakehurst, NJ

Department of the Air Force

Assistant Secretary of the Air Force (Acquisition), Washington, DC

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Defense Logistics Agency, Alexandria, VA

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Senate Committee on Governmental Affairs
House Committee on Appropriations
House Subcommittee on Defense, Committee on Appropriations
House Committee on Armed Services
House Committee on Government Operations
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Report No. 95-024

November 4, 1994

**MEMORANDUM FOR UNDER SECRETARY OF DEFENSE FOR ACQUISITION
AND TECHNOLOGY**

SUBJECT: Automatic Test Systems Acquisition (Project No. 4AE-5029)

Introduction

We are providing this final memorandum report for your information and use. This report discusses the efforts to achieve commonality in standards among the Military Departments as part of the DoD policy for automatic test systems (ATS). Those systems are comprised of automated test hardware, operating system software, and test program sets. ATS are used in DoD field and depot electronics maintenance activities to test electronic equipment, to reduce troubleshooting times, and to augment the skills of field technicians. When this audit was announced March 28, 1994, the Under Secretary of Defense for Acquisition and Technology (USD[A&T]) had not established DoD policy and procedures for ATS acquisition. (See Enclosure 1 for definitions of terms in this report.)

Audit Results

On April 29, 1994, USD(A&T) issued a DoD policy memorandum to improve the ATS acquisition process (Enclosure 2). Also, the Office of the USD(A&T) has prepared a draft directive for the DoD ATS Acquisition Program and drafted ATS-related changes to be in DoD Instruction 5000.2, "Defense Acquisition Management Policies and Procedures," February 23, 1991. These policies and procedures for ATS acquisition will minimize the introduction of unique types of ATS and encourage the use of commercial-off-the-shelf testers and components throughout DoD. According to the Navy, the use of commercial-off-the-shelf testers and components will reduce logistics burdens and long-term cost to DoD. The Navy, as the designated DoD ATS Executive Agent, is also leading a tri-Service survey of all current and ongoing Military Department ATS programs for application of the ATS policy and is evaluating requirements for ATS research and development funding.

Objectives

The overall audit objective was to evaluate the DoD efforts to achieve commonality in standards among the Military Departments as part of DoD automatic test systems investment strategy. The audit also assessed the adequacy of applicable internal controls.